

What is claimed is:

1. A method of manufacturing a semiconductor device; which comprises the steps of:

5 depositing, on a basic substance surface with a difference in level, a first film through an anisotropic growth;

forming, through an isotropic growth, a second film having a polishing rate equivalent to or less than a polishing rate of said first film to reinforce a projection formed on said first film; and

10 polishing said first film and said second film using a ceria slurry.

2. A method of manufacturing a semiconductor device according to Claim 1, wherein said difference in level is formed of a trench.

3. A method of manufacturing a semiconductor device according to Claim 1, wherein said difference in level is formed of an interconnection.

15 4. A method of manufacturing a semiconductor device according to Claims 1, wherein a stopper film which is to act as a polishing stopper, having a polishing rate less than a polishing rate of said first film, is formed on an upper level section constituting said difference in level.

20 5. A method of manufacturing a semiconductor device according to Claim 4, wherein said first film and said second film are both oxide films and said stopper film is a nitride film.

6. A method of manufacturing a semiconductor device according to Claim 1, wherein said first film is a film formed by the high density plasma CVD (Chemical Vapor Deposition) method.

25 7. A method of manufacturing a semiconductor device according to Claim 1, wherein said second film is a film formed by one of the atmospheric CVD method, the low pressure CVD method and the plasma CVD method.

8. A method of manufacturing a semiconductor device; which

comprises the steps of:

depositing, on a basic substance surface with a difference in level, a first film through an anisotropic growth;

5 polishing an angular section of a projection formed on said first film, using a slurry whose grains do not make aggregation; and  
polishing, subsequently, said first film, using a ceria slurry.

9. A method of manufacturing a semiconductor device according to Claim 8, wherein said difference in level is formed of a trench.

10 10. A method of manufacturing a semiconductor device according to Claims 8, wherein said difference in level is formed of an interconnection.

11. A method of manufacturing a semiconductor device according to Claims 8, wherein a stopper film which is to act as a polishing stopper, having a polishing rate less than a polishing rate of said first film, is formed on an upper level section constituting said difference in level.

15 12. A method of manufacturing a semiconductor device according to Claim 11, wherein said first film is an oxide film and said stopper film is a nitride film.

20 13. A method of manufacturing a semiconductor device according to Claim 8, wherein said first film is a film formed by the high density plasma CVD method.

14. A method of manufacturing a semiconductor device according to Claim 8, wherein said second film is a film formed by one of the atmospheric CVD method, the low pressure CVD method and the plasma CVD method.

25 15. A method of manufacturing a semiconductor device; which comprises the steps of:

depositing, on a basic substance surface with a difference in level, a first film through an anisotropic growth;

forming, through an isotropic growth, a second film having a polishing rate equivalent to or less than a polishing rate of said first film to reinforce a projection formed on said first film;

5 polishing a part of said first film, using a slurry whose grains do not make aggregation; and

polishing, subsequently, said first film, using a ceria slurry.

16. A method of manufacturing a semiconductor device according to Claims 15, wherein said difference in level is formed of a trench.

10 17. A method of manufacturing a semiconductor device according to Claims 15, wherein said difference in level is formed of an interconnection.

18. A method of manufacturing a semiconductor device according to Claims 15, wherein a stopper film which is to act as a polishing stopper, having a polishing rate less than a polishing rate of said first film, is formed on an upper level section constituting said difference in level.

15 19. A method of manufacturing a semiconductor device according to Claim 18, wherein said first film and said second film are both oxide films and said stopper film is a nitride film.

20 20. A method of manufacturing a semiconductor device according to Claim 15, wherein said first film is a film formed by the high density plasma CVD method.

21. A method of manufacturing a semiconductor device according to Claim 15, wherein said second film is a film formed by one of the atmospheric CVD method, the low pressure CVD method and the plasma CVD method.

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